

REMARKS

By this amendment, the subject matter of claim 1 has substantially been copied into new claim 18, along with other features which will be described below. Claims 2, 7, 8, 9 and 13 have been amended to depend upon claim 18. Claims 1, 15, 16, 17 have been cancelled. Claims 18 to 22 are new and provide the Applicants with the scope of protection to which they are entitled.

Claim Rejections – 35 USC §103

Claims 1, 2, 9, 13 and 15-17 stand rejected under 35 USC 103(a) as being unpatentable over Kohashi (US Patent 4,488,785) in view of Lin (US Patent 6,525,866). Since claim 18 has replaced claim 1, and also includes other features, it will be discussed with respect to this rejection.

The Examiner asserts that Kohashi discloses “a discrete drop of liquid”. Applicants respectfully disagree. Kohashi discloses a continuous liquid 20 that impregnates the porous member 10 and is supplied through space 101 (column 2, lines 33 – 35). In the rejection, the Examiner points to what he suggests is a discrete drop of liquid, but Applicants find no support in Kohashi for the Examiner’s assertion, and one skilled in the art would not suggest that the Examiner’s arbitrary circled area is equivalent to a discrete drop of liquid. In fact, it is merely a portion of the continuous liquid that concurrently resides in both the porous member and the circled area above the porous member.

The Examiner argues that “there is no definite maximum and/or minimum quantity of a liquid to be construed as a drop of the liquid”. Applicants’ new claim clarifies that the discrete drop of conductive liquid is provided over, but substantially not in, the porous material layer, and further that it is contained by the electrode. Support for this is found in Figures 2 and 3, and page 3, lines 15 – 22. Thus, the discrete drop as claimed clearly has a fixed volume and is not indefinite. It is not a small portion of a much larger quantity of fluid as described in Kohashi. According to common usage, the word “discrete” means “individually separate and distinct”. In Kohashi, the fluid is always in the porous member and commonly supplied throughout the device through space 101, regardless of the voltage state. The present invention as set forth in claim 18 operates very differently in that there is substantially no conductive fluid in the

porous material layer in the absence of a voltage; it is sitting over the porous material and contained by the electrode. That the discrete drops are not part of a larger reservoir of fluid like Kohashi is evidenced at page 6, lines 18-20, which describes a matrix array of individual elements:

A matrix or plurality of elements can be assembled to form a display device. In this respect a grid of electrodes could be provided onto which a plurality of individual drops of liquid could be placed.

In other words, the plurality of elements each has its own individual (discrete) drop of conductive liquid.

The Kohashi electrode structure further differs from Applicants' presently claimed invention. With respect to the Examiner's circled area, there are numerous segment electrodes 31. See Kohashi Fig 2 for further details of this region. Kohashi's electrodes do not act to contain the volume of liquid in interstices 401. In the presently claimed invention, there is a single electrode in contact with the discrete drop of conductive liquid and it acts to contain the drop.

Applicants agree with the Examiner's statement that "Kohashi does not teach the layer comprising a plurality of conductive particles covered with a lyophobic and electrically insulating covering." In fact, Kohashi's porous member is a dielectric material such as cellulose acetate (column 2, lines 25 – 30). Applicants point this out because Kohashi's use of dielectric materials as the porous member teaches away from using a conductive materials as a porous member. From an electrical standpoint, conductors and dielectrics are opposites, and one skilled in the art would not look to a conductive material as a suitable alternative to a dielectric material in an electronic device.

The Examiner states that "*...Lin teaches the concept of including a plurality of conductive particles [col. 2 lines 34-38] in a layer of a display [col. 2 lines 26-38]. It would have been obvious to one of ordinary skill in the art at the time of the invention to included the plurality of conductive particles of Lin in the layer of Koahashi in order to allow the layer of Kohashi to display different colors.*" Lin is directed to electrophoretic displays that are fundamentally different than the present invention, which is a type of electrowetting display. Lin is also fundamentally different from Kohashi's electroosmotic system. In Lin, charged particles are provided within an electrophoretic display liquid and the

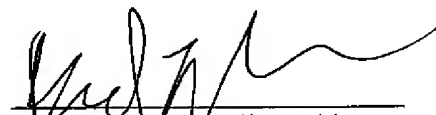
charged particles move within the liquid cell in response to an applied voltage. In the present invention, a liquid moves in and out of a porous layer of conductive particles in response to a voltage; the particles do not move into and out of the liquid. The physics are entirely different. In Kohashi, there are no particles to begin with. Applicants fail to understand how one skilled in the art would apply conductive particles of Lin to allow Kohashi to display different colors, as asserted by the Examiner. Kohashi calls for a dielectric material as its porous member. It is not at all clear that Kohashi would function if the dielectric material is replaced with colored, typically opaque, charged particles of Lin. Light is intended to pass through the device of Kohashi. The charged particles of Lin would move upon an applied voltage, thereby affecting or destroying the porosity. With all of the above problems, one skilled in the art would not consider combining Kohashi and Lin. If such combination were made, it would nevertheless not resemble anything even remotely similar to the present invention.

With respect to the lyophobic and electrically insulating covering of the present invention, the Examiner states that Kohashi as modified by Lin fails to teach this. Applicants agree. The Examiner takes Official Notice that *"it is well known in the art to cover particles with a polymer to prevent the particles from coagulation"*. Even assuming for the sake of argument that this statement is relevant, the combination of Lin and Kohashi (discussed above) and this last assertion still fails to teach or suggest the presently claimed invention. As previously explained, the Examiner's Official Notice is off point in any event. Applicants are not claiming a material to prevent particles from coagulation, but rather, a lyophobic and electrically insulating covering necessary to enable the display element to work. Any polymer will not do. When choosing materials for their lyophobic and electrically insulating properties, one skilled in the art would not assume that polymers used as anti-coagulants would be useful. Anti-coagulants are not all inherently lyophobic and electrically insulating, and lyophobic and electrically insulating materials are not all inherently anti-coagulating. Examiner's argument that it would have been obvious to cover particles with an anti-coagulating polymer is not relevant.

Claims 7 and 8 stand rejected under 35 USC 103(a) as being unpatentable over Kohashi (US Patent 4,488,785) and Lin (US Patent 6,525,866) as applied to claims 1, 2, 9 and 13 above, and further in view of Steckl et al. (US Patent 7,123,796). Since claims 7 and 8 depend upon new claim 18, these and all other claims that now depend upon claim 18 should all be allowable for the reasons set forth above.

It is believed that these changes now make the claims clear and definite and, if there are any problems with these changes or Applicants' positions, Applicants' attorney would appreciate a telephone call.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.